MISEK, Karel; POLAK, Jaroslav

Measurement of the temperature of thin metallic wires.
Cas fys 13 no.2:87-93 '63

1. Ustav fyziky pevnych latek, Ceskoslovenska akademie ved, Praha.

POIAK, Jiri

Varients of Willebrand's disease in a 2-year old boy. Cesk. pediat. 12 no.9:792-795 5 Sept 57.

1. Detska klinika VLA v Hradci Kralove; prednosta prof. J. Blecha.
(HEMORRHAGIC DIATHESIS, in inf. & child
thrombopathy in a 2-year old boy (Cz))

CIHULA, Jiri; POIAK, Jiri

Attempted clinical investigation of capillary permeability in normal children & in children with rheumatic fever; Landis test. Cesk. pediat. 13 no.8:694-699 5 Sept 58.

1. Detska klinika VLA Hradci Kralove, prednosta prof. Dr. J. Blecha. J. C., detska klinika VKA, Hradec Kralove.
(RHEUMATIC FEVER, physiol.
capillary permeability in child., Landis test (Cz))
(CAPILLARY PERMEABILITY, in various dis.
rheum. fever, Landis test (Cz))

POLAK, Jiri

History of the diagnosis of hemophilia. Sborn. ved. prac. lek. fak. Karlov. Univ. (Hrad. Kral.) 6 no.4:361-364 '63.

1. Detska klinika, Prednosta: prof. MUDr. J.Hlecha, DrSc.

POLAK, Jiri

Clumping of thrombocytes in blood smears (dependence on large numbers of blood platelets). Sborn. ved. prac. lek. fak. Karlov. univ. (Hrad. Kral.) 4 no.2 suppl.:187-192 '61.

1. Detska klinika; prednosta prof. MUDr. J. Blecha.

(BLOOD PLATELETS)

POLAK, Josef, inz.

Determining the indirect cost of earthworks. Vodni hosp 12 no.11:464-468 N '62.

1. Ministerstvo polnohospodarstva, lesneho a vodneho hospodarstva.

CZECHOSLOVAKIA / Cultivated Plants. Commercial. M-5
Oil-Bearing. Sugar-Bearing.

Abs Jour: Ref Zhur-Biol., No 6, 1958, 25178

Author : Polak, K.
Inst : Not given
Title : Experiments in Planting Sugar Beet Seedlings

Orig Pub: Za vysokou urodu, 1957, 6, No 3, 56-57 (Czech)

Abstract: No abstract.

Card 1/1

POLAK, K.

This uear's yields of planted and sown sugar beets on Stepanovice Collective Farm.

P. 29. ROLNICKE HLASY. (Praha, Czechoslovakia) Vol. 11, no. 12, Dec. 1957

SO: Montly Index of East European Accession (EEAI) LC, Vol. 7, No. 5, May 1958

POLAK, K.

Tenth anniversary of the foundation of the Welding Engineers Institute at the Slovak Technical University in Bratislava. p. 284.

ZVARANIE. (Ministerstvo hutneho prumyslu a rudnych bani a Ministerstvo strojareustva)
Bratislava, Estonia.
Vol. 8, no. 9, Sept. 1959

Monthly List of East European Accessions (EEAI) LC, Vol. 8, no. 11.
November 1959

Uncl.

L 29469-66

ACC NR: AP6019981 SOURCE CODE: CZ/0079/65/007/003/0265/0267

AUTHOR: Nolcan, J. (Bratislava); Polak, L.

ORG: Psychiatric Clinic, Bratislava

TITLE: Changes in blood protein fractions in the course of mental disease treatment

SOURCE: Activitas nervosa superior, v. 7, no. 3, 1965, 265-267

TOPIC TAGS: blood, protein, psychoneurotic disorder

ABSTRACT: Tests were conducted with 60 patients; changes in protein fractions after neurothymoleptic pharmacotherapy were not significant. Changes after other types of therapy were relatively small. After insulin treatment, a considerable improvement in the protein spectrum was found. Orig. art. has: 1 table. [Orig. art. in Eng.] [JPRS]

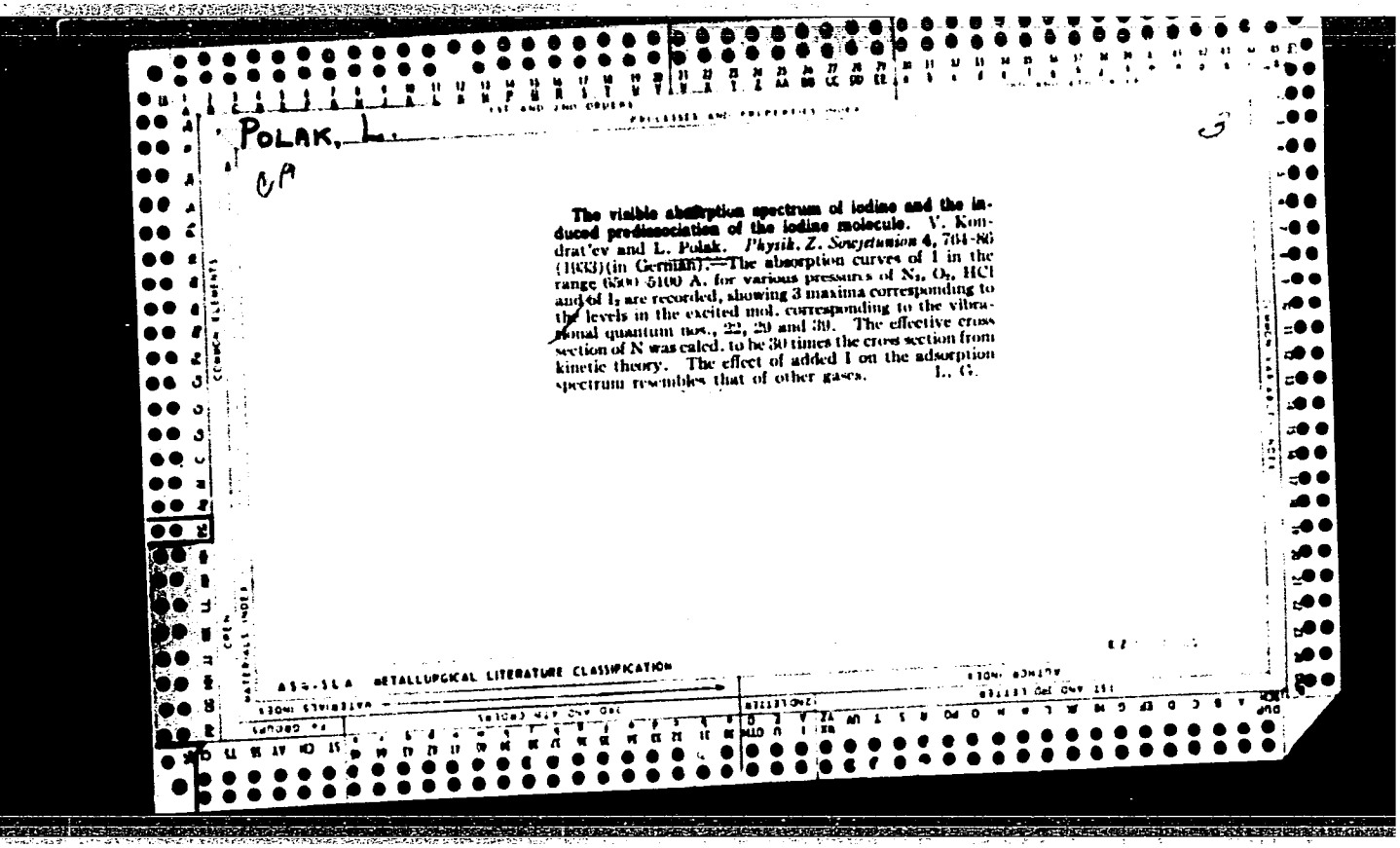
SUB CODE: 06 / SUBM DATE: none

Card 1/1

CIGER,J.; POLAK,L.; GALIK,E.

Contribution to the theory of normal personality and to a positive determination of its features. Activ. nerv. sup. 6 no.1:112-114 '64.

*



POLAK, L.

CA

The visible absorption spectrum of iodine and the induced predissociation of the iodine molecule. V. Kondrat'ev and L. Polak. *Physik. Z. Sowjetunion* **4**, 704-86 (1933)(in German).—The absorption curves of I in the range 6500-5100 A. for various pressures of N_2, O_2, HCl and of I_2 are recorded, showing 3 maxima corresponding to the levels in the excited mol. corresponding to the vibrational quantum nos., 22, 29 and 30. The effective cross section of N was calcd. to be 30 times the cross section from kinetic theory. The effect of added I on the adsorption spectrum resembles that of other gases. L. G.

POLAK, L.

Determination of permanent economic units based on forest types. p. 207.
SBORNIK. RADA C: SPISY FAKULTY LESNICKE. Brno.
No. 4, 1955.

SOURCE: EEAL - LC Vol. 5 No. 10 Oct. 1956

POLAK, L.

Contribution to the problem of forest partition into permanent units. p. 17
(SBORNIK. RADA C: SPISY FAKULTY LESNICKE, No. 1, 1957, Brno, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 12, Dec 1957. Uncl.

GUTYRYA, V.S. [Hutyria, V.S.], akademik; KACHAN, A.A. [Kachan, O.O.]; KOLBANOVSKIY, Yu.A. [Kolbanovs'kyi, IU.A.]; POLAK, L.S.; NIZEL'SKIY, Yu.N. [Nizel's'kyi, IU.M.]; FROLOVA, V.S.

Radiolysis of cyclohexane adsorbed on synthetic zeolites. Dop. AN URSR no.1:82-84 '64. (MIRA 17:4)

1. Institut khimii polimerov i monomerov AN UkrSSR i Institut neftekhimicheskogo sinteza AN SSSR. 2. AN UkrSSR (for Gutyrya).

BEREZKIN, V.G.; MYSAK, A.Ye.; POLAK, L.S.

Determination of oxygen by means of a flame-ionization detector. Izv. AN SSSR. Ser. khim. no.10:1871-1873 O '64. (MIRA 17:12)

1. Institut neftekhimicheskogo sinteza AN SSSR.

L 29539-66 EWT(m)/EWP(j)/T IJP(c) GG/RM
ACC NR: AP6007771 (A) SOURCE CODE: UR/0195/66/007/001/0027/0032

AUTHOR: Dolmatov, S. A.; Polak, L. S.

ORG: Institute of Petrochemical Synthesis im. A. V. Topchiyev, AN SSSR (Institut neftekhimicheskogo sinteza AN SSSR)

TITLE: Kinetics of radiation-induced allyl polymerization. II.

SOURCE: Kinetika i kataliz, v. 7, no. 1, 1966, 27-32

TOPIC TAGS: polymerization kinetics, allyl alcohol, amorphous polymer, irradiation

ABSTRACT: Allyl alcohol was polymerized by irradiation and the effects of solvent, inhibitors, and oxide addition are investigated. The study was made with dose rates of 243-850 r/sec and at temperatures of -78°, 52°, and 300°C. Polymerization is assumed to follow a radical mechanism. Cyclohexane, water, and benzene were used as solvents; the resulting polymer was insoluble in these solvents which makes for an increased rate of conversion (gel effect) when the polymer precipitates. The polymer has a transparent, egg-white appearance. Diphenylpicrylhydrazyl, benzoquinone, hydroquinone, pyrogallol, and atmospheric oxygen are studied as inhibitors. Polymerization with these inhibitors occure in mass and in an azeotropic mixture of monomer and water. Of the five, DPPH and oxygen fail to show inhibitory effects. Al_2O_3, ZnO, and silica are added in concentrations of 40-50 wt % but fail to affect the rate of polymerization. The

UDC: 541.124:542.952.6 + 541.15

Card 1/2

L 29539-66

ACC NR: AP6007771

limiting viscosity number ber n is determined as a function of polymer yield. There is an abrupt increase in n when the wt % yield reaches 80. The increase in n is interpreted as an abrupt increase to 10^3-10^4 in the degree of polymerization, $\overline{P}$. Compared to other polymers, a low n of the order of 1-10 ml/g is found even at considerable $\overline{P}$ indicating that the polymer molecule is considerably branched and probably spherical in solution. The Huggins constant is found in the region of 1-3. Infrared bands for C=C and C-H deformation are reduced in intensity as the yield of polymer is increased. The amorphous polymer formed at doses up to $1.2 \cdot 10^9$ r is completely soluble in a hot mixture of methanol and HCl. Orig. art. has: 4 figures, 1 table.

SUB CODE: 07/ SUBM DATE: 17Feb64/ ORIG REF: 005/ OTH REF: 006

Card 2/2 PB

POLAK, L.S., prof., otv. red.

[Kinetics and thermodynamics of chemical reactions in a low-temperature plasma] Kinetika i termodinamika khimicheskikh reaktsii v nizkotemperaturnoi plazme. Moskva, Nauka, 1965. 252 p. (MIRA 18:8)

1. Akademiya nauk SSSR. Institut neftekhimicheskogo sinteza.

L 60041-65 EWT(m)/EPF(c)/EPF(n)-2/EWP(j) Pc-4/Pr-4/Pu-4 GG/JAJ/RM

ACCESSION NR: AP5018034 UR/0191/65/000/007/0007/0013
678.742.3:621.039.83:678.021.122

AUTHOR: Nechitaylo, N. A.; Sanin, P. I.; Gol'denberg, A. L.; Polak, L. S.

TITLE: Effect of stabilizers on irradiated polypropylene

SOURCE: Plasticheskiye massy, no. 7, 1965, 7-13

TOPIC TAGS: polypropylene, ionizing radiation, oxidation inhibitor, phenyl-naphthylamine, ionol, polymer stabilizer, gel formation

ABSTRACT: Polypropylene (MW~224,000) was irradiated with a Co^{60} source in ampoules at about 10^{-3} mm Hg. The stabilizers chosen were phenyl-β-naphthylamine (Neozone D), 2-mercaptobenzimidazole, and barium di-n-octadecyldithiophosphate; for comparison, experiments were made with ionol. Thermograms were recorded automatically with a Kurnakov pyrometer, and the temperatures of the thermal effects observed were studied in relation to the irradiation dose and the content of stabilizers. The endothermic effects on the heating curves correspond to the melting of the polymer samples, and the exothermic ones to the reactions of oxidation of polypropylene. The degree of oxidation was determined by infrared spectroscopy from the content of carbonyl compounds. On the basis

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L 60041-65

ACCESSION NR: AP5018034

of the quantity of carbonyl groups formed in the various experiments, the most effective oxidation inhibitors are phenyl-β-naphthylamine and ionol. The intrinsic viscosity of the samples was studied as a function of the irradiation dose. The protection coefficients, energy transfer factors, and intrinsic viscosities of polypropylene irradiated in air were determined. The number of breaks in the primary molecular chain caused by the ionizing radiation was correlated with the reciprocal molecular weight. The addition of 2% ionol is sufficient to prevent cross-linking in the polymer at a dose of 70 mr. At 160 and 250 mr, 5 and 8% ionol, respectively, is needed to prevent gel formation. "The authors thank M. A. Dzyubin for considerable assistance in the work."
Orig. art. has: 8 figures, 6 tables, and 2 formulas.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: OC, NP

NO REF SOV: 006 OTHER: 010

Card 2/2

L 62081-65 EPF(c)/EPF(n)-2/EPR/EWG(j)/EWA(h)/EWP(j)/EWT(m)/EWA(1) Pc-4/Pr-4/
ACCESSION NR: AP5016840 Ps-4/Pu-4/Peb GG/WW/RM UR/0204/65/005/003/0363/0367
665.521.2:541.15:542.92

AUTHORS: Polak, L. S.; Glazunov, P. Ya.; Glushkev, V. Ye.; Ryabchikova, G. G.

TITLE: Radiative-thermal cracking of low octane straight-run distillation benzene in a uniform temperature field

SOURCE: Neftekhimiya, v. 5, no. 3, 1965, 363-367

TOPIC TAGS: benzene, distillation, reactor, radiation effect, thermal decomposition

ABSTRACT: The present work is a continuation of an earlier investigation. The present experiments were conducted with an improved electron source reactor in which a uniform temperature field could be established. Low-octane straight-run distillation benzene (with the end of boiling at 140C) was cracked at 500, 550, and 600C at the pump-through-velocity of 150 ml/hour in the reactor shown schematically. Yield and composition of the thermal and radiation-thermal cracking products of the same benzene in the reactors with and without a uniform temperature field were tabulated for comparison. The relation of the gaseous products yield (in both procedures) to temperature is shown in Fig. 1 on the Enclosure. The relation of the benzene conversion intensity to temperature and the velocity of crude feeding are also shown

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L 62081-65

ACCESSION NR: AP5016840

2

graphically. The effective activation energies of the thermal and radiation-thermal processes were found to be 60 and 24 kcal/mol. Orig. art. has: 2 tables and 5 figures.

ASSOCIATION: Institut neftekhimicheskogo sinteza im. A. V. Topchiyeva AN SSSR (Institute of Petrochemical Synthesis, AN SSSR); Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry, AN SSSR)

SUBMITTED: 04Jul64 ENCL: 01 SUB CODE: GC, GC

NO REF SOV: 003 OTHER: 001

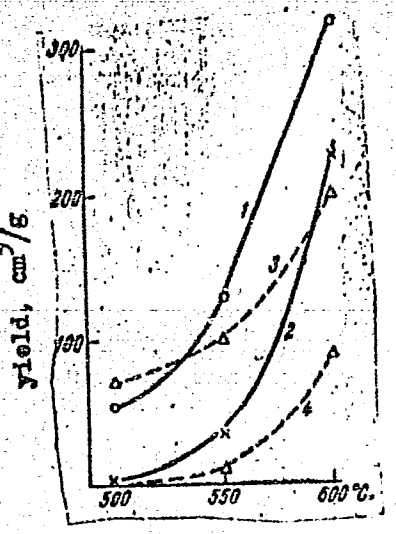
Card 2/3

L 62081-65

ACCESSION NR: AP5016840

ENCLOSURE: 01

Fig. 1. The relation between the yield of gaseous products in thermal and radiation-thermal cracking of the straight-run distillation benzene with the boiling end at 140C to temperature. 1- radiation-thermal cracking in the reactor with a uniform temperature field; 2- thermal cracking in the same reactor; 3- radiation-thermal cracking in the reactor with nonuniform temperature field; 4- thermal cracking in the same reactor



Card 3/3

L 39042-66 EWT(1)/EWP(e)/[illegible]

ACC NR: AR6022896 SOURCE CODE: UR/0081/66/000/005/I012/I012

AUTHOR: Aksenov, V. P.; Blinov, L. M.; Marin, V. P.; Polak, L. S.; Shchipachev, V. S.

TITLE: SHF plasmatron and some possible areas of its application in chemistry

SOURCE: Ref. zh. Khimiya, Part II, Abs. 5I101

REF SOURCE: Sb. Kinematika i termodinamika khim. reaktsiy v nizkotemperaturn. plazme, M., Nauka, 1965, 233-237

TOPIC TAGS: plasmatron, SHF, chemical synthesis, ionizing ~~radiation~~ irradiate

ABSTRACT: It is shown that by using the ionizing effect of SHF radiation one can carry out the following processes: synthesis of ammonia, recovery of nitrogen oxides from air (in the production of nitric acid); synthesis of hydrochloric acid, hydrocyanic acid; recovery of sulfur from hydrogen sulfide and flue gases; petroleum cracking; preparation of acetylene from methane; production of alcohols; chlorination, nitration, hydroxylation, carboxylation reactions; synthesis of benzene, biphenyl, phenol; polymerization of ethylene into polyethylene; preparation of pyroceramics; preparation of ultrapure films and metals. A diagram of the pulsed SHF device is given, and certain characteristics of the SHF discharge are described. Results of measurements of the temperatures and concentrations of electrons and ions in the SHF discharge and of preliminary experiments on the formation of nitrogen oxides in the SHF plasmatron are given. G. L. [Translation of abstract]

SUB CODE: 07

Card 1/1

L 64555-65 EWT(m)/EPF(c)/EWP(j)/T RM

ACCESSION NR: AP5020969 UR/0190/65/007/008/1400/1405

541.64+66.095.26+678.84

AUTHOR: Gusel'nikov, L. Ye.; Yegorov, Yu. P.; Nametkin, N. S.; Polak, L. S. Chernysheva, T. I.

TITLE: Synthesis and polymerization of certain polyfunctional vinylsiloxanes

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 8, 1965, 1400-1405

TOPIC TAGS: vinylsiloxane, polymerization, cyclopolymerization, organic synthetic process

ABSTRACT: The possibility of obtaining linear high molecular weight polymers by polymerizing polyfunctional vinylsiloxanes was investigated. Tetra- and hexafunctional monomers were synthesized by hydrolysis of the appropriate vinylchlor(ethoxy)silane and cohydrolysis of mono-and di-functional vinylethoxysilanes. 1,3-Divinyl-1,1,3,3-tetramethyldisiloxane, 1,3-divinyl-1,3-dimethyl-1,3-diphenyldisiloxane and 1,3,5-trivinyl-1,1,3,5,5-pentamethyltrisiloxane were synthesized and then subjected to polymerization initiated by γ-irradiation or by tertiary butyl peroxide. The polymers produced by either method were essentially the same. Soluble high molecular weight polymers were produced, but the

Card 1/2

polymerization yield was reduced as functionality of the monomer increased. IR spectra of the monomers and polymers and the decrease in residual unsaturation led to the conclusion that cyclopolymerization took place in addition to polymerization at one vinyl group of the monomer. Orig. art. has: 3 figures, 1 table, and 2 equations

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR (Institute of Petrochemical Synthesis, AN SSSR) 44,55

SUBMITTED: 17Sep64 ENCL: 00 SUB CODE: OC, GC

NR REF SOV: 004 OTHER: 013

L 4579-66 EWT(m)/EPA(s)-2/EPF(c)/EWP(j)/T RM

ACC NR: AP5026987 SOURCE CODE: UR/0020/65/164/005/1065/1068

AUTHOR: Paushkin, Ya. M.; Polak, L. S.; Lunin, A. F.; Patalakh, I. I.

ORG: Moscow Institute of the Petrochemical and Gas Industry im. I. M. Gubkin (Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti); Institute of Petrochemical Synthesis im A. V. Topchiyev, Academy of Sciences, SSSR (Institut neftekhimicheskogo sinteza Akademii nauk SSSR)

TITLE: New synthesis method for nitrogen-containing polymers with conjugated bonds and their electrical properties

SOURCE: AN SSSR. Doklady, v. 164, no. 5, 1965, 1065-1068

TOPIC TAGS: organic semiconductor, semiconducting polymer, polynitrile, polymerization, electric property

ABSTRACT: A new preparative method has been developed for polynitriles. The method involves the heating of amides or ammonium salts of mono- and di-basic organic acids with a dehydrating agent ($ZnCl_2$):

$$RCOONH_4 \xrightarrow[-2H_2O]{ZnCl_2} R{-}C{\equiv}N \rightarrow {-}\overset{R}{\underset{|}{C}}{=}N{-}.$$

Card 1/3 UDC: 541.64.67

09010812

L 4579-66

ACC NR: AP5026987

The method makes it possible to prepare polynitriles without resorting to such scarce starting materials as hydrocyanic acid. The polynitriles shown in Table 1 were pre-

Table 1. Structure and electrical and physical properties of polymers

Run no.	Starting material	Polymer structure	Conductivity σ_{293}, ohm/cm	Conductivity E_a, ev	EPR spectrum		Thermoelectric power
1							
2							
3							
4							
6							
7							
8							
9							

* Prepared for the first time.

Card 2/3

L 4579-66

ACC NR: AP5026937

pared. The optimum preparative conductors were determined. The polymers were dark-brown to black powders, infusible and insoluble in the common solvents, and exhibiting high thermal stability. Weight losses at 800C were 7—12%. IR spectra and elemental analysis data of the polymers were identical to those of polynitriles prepared by polymerization of the nitriles, confirming the proposed reaction mechanism and structures. X-ray structural analysis indicated the high crystallinity of the polymers. Table 1 shows the electrical properties of the polymers measured for pressed pellet samples. A correlation was found between activation energy for conduction and chemical structure of polymer repeat unit. This correlation is interpreted in terms of probability of disruption of conjugation. Orig. art. has: 1 figure and 2 tables. [SM]

SUB CODE: OC, EM/ SUBM DATE: 16Mar65/ ORIG REF: 008/ OTH REF: 002/ ATD PRESS:

4136

Card 3/3 DP

POLAK, Ladislav

Active search for precancerous conditions in the Brno region. Cesk.rentg. 14 no.5:338-340 O '60.

1. Onkologicky ustav, Brno, reditel doc. MUDr. Jan Sprindrich. (NEOPLASMS diag.)

POLAK, IADISLAV.

Inseminace skotu. [1. vyd.] Praha, Statni zemedelske nakl., 1956. 43k p.
[Insemination of cattle. 1st ed.]
DA Not in DLC

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 10, October 1957. Uncl.

POLAK, Ladislav -0-

"Aims of Czechoslovak Veterinary Service in 1961," by Ladislav POLAK, DVN, in Veterinarstvi (Veterinary Magazine), Vol. XI, No. 1, Prague, Jan 61, pp. 1-4.
Translated by JPRS-4785, 19 Jul 61, Of Use Only.

~~KARL, Zdenek~~ POLAK, LADISLAV

SURNAME, Given Names

Country: Czechoslovakia

Academic Degrees: Doctor of Veterinary Medicine

Affiliation: Ivanovice na Hane

Source: Prague, Veterinarstvi, Vol XI, No 5, 1961, pages 189-192.

Data: "African Swine Plague. Report on the Meeting of the International Epizootic Office in Paris, 17-20 January 1961."

Co-author:

POLAK, Ladislav, Doctor of Veterinary Medicine, Prague

GPO 981643

POLAK, LADISLAV

POLAK, Ladislav
SURNAME, Given Names

Country: Czechoslovakia

Academic Degrees: Doctor of Veterinary Medicine

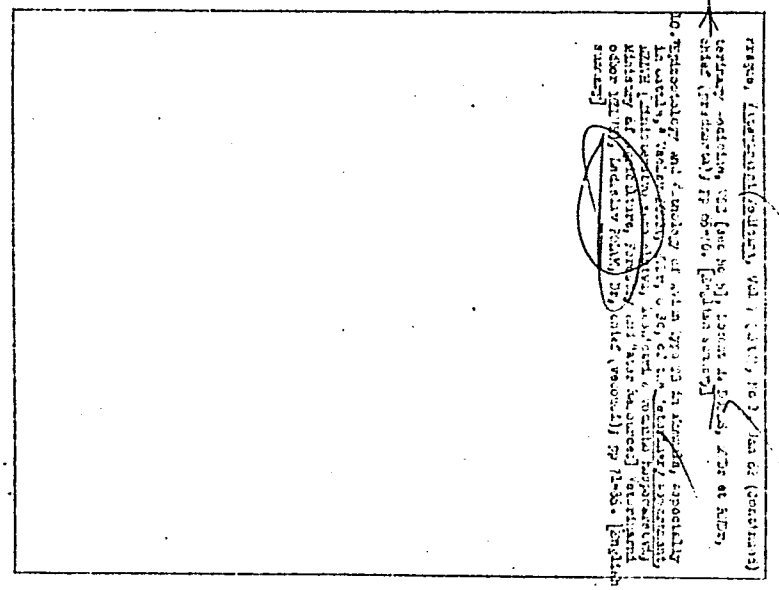
Affiliation: Prague

Source: Prague, Veterinarstwi, Vol XI, No 7, 1961, pages 244-246.

Data: "New Method of Insemination in Cattle."

Co-authors:
PODANY, Jan, Doctor of Veterinary Medicine, Brno.
NEUMANN Jaroslav, Doctor of Veterinary Medicine, Brno.

POLAK, Radislav



POLAK, Ladislav CZECHOSLOVAKIA

MVDr

MZLVH, Prague

Prague, Veterinarstvi, No 11, Nov 62, pp 324-325.

"Present Epizootic Aphtha Type SAT 1 in the Near East and Europe"

Co-author:

HUBIK, Rudolf, MVDr, Bioveta, Terezin

POLÁK, L., DVM.

Czechoslovakia

Brno, Veterinářství, No 1, 1963, pp 1-6

"Principles of the Veterinary Service in 1963."

FRANYO, Istvan; POLAK, Laszlo

Why is an aerial antenna better? Radiotechnika 13 no.4:
159 Ap '63.

BIELICKY, T.; POLAK, L.

Present concept of allergy with special reference to pathogenesis of eczema according to the Pavlovian theory. Cas. lek. cesk. 92 no.19:510-519 8 May 1953. (CLML 24:5)

1. Of the Second Dermato-Venereological Clinic (Head--Prof. K. Hubschmann, M. D.) of Charles University and of the Institute of Biology (Director -- Prof. I. Malek, M. D.) of the Czechoslovak Academy of Sciences, Prague.

Polak, L.

W The influence of narcotic sleep on experimental and
M chemical inflammations and on sensitization of the skin of
P guinea pigs with dinitrochlorobenzene. L. Polák and T.
Bielický. *Časopis Lékařů Českých* 92, 850-3(1953); *Excerpta Med.*, Sect. V, 7, 7(1954).—P. and B. studied the influence of sleep on (1) inflammation of the skin after application of croton oil, (2) inflammation after intracutaneous application of a suspension of staphylococci, and (3) the degree of sensitization to dinitrochlorobenzene in guinea pigs. Sleep induced by urethan or barbiturates reduces all these kinds of inflammation. This is due to the protective depression of the CNS group. R. L. M.

(1)

POLAK, Ladislav, MUDr

Analysis of the reflex mechanism of the spread of sensitization and the influence of some central factors. Cesk. derm. 34 no.4:236-241 Aug 54.

(REFLEX
mechanism of skin sensitization, influence of central factors)
(ALLERGY
reflex mechanism of sensitization, influence of central factors)

POLAK, L.

Analysis of the afferent segment of the reflex arch in sensitization of the skin with dinitrochlorobenzol in guinea pigs. Cesk. fysiol. 4 no.2:186-194 May 55.

1. Fysiologicky ustav Cs. akademie ved, Praha.
(NITROBENZENE, derivatives,
chlorodinitrobenzene, skin sensitization, funct. of afferent segment of reflex arch)
(SKIN, effect of drugs on,
chlorodinitrobenzene, sensitization in rabbits, eff. on afferent segment of reflex arch)
(ALLERGY, experimental,
chlorodinitrobenzene sensitization of skin in rabbits, eff. on afferent segment of reflex arch)
(REFLEX,
afferent segment of reflex arch in chlorodinitrobenzene sensitization of skin in rabbits)

POLAK, L.

Analysis of the efferent segment of reflex arch in sensitizati
of guinea pigs with dinitrochlorobenzene. Cesk. fysiol. 4 no.:
309-314 1955.

(NITROBENZENE, derivatives,
chlorodinitrobenzene, eff. of sensitization on afferent
segment of reflex arch)
(REFLEX,
afferent segment of reflex arch, eff. of chlorodinitro-
benzene sensitization)

POLAK, L.

Spreading of sensitization of the skin to dinitrochlorobenzene following myelotomy. Cesk. fysiol. 4 no.3:315-318 1955.

(NITROBENZENE, derivatives,
chlorodinitrobenzene, skin sensitization, eff. of myelotomy)
(SKIN, effect of drugs on,
chlorodinitrobenzene sensitization, eff. of myelotomy)
(SPINAL CORD, physiology,
eff. of myelotomy on chlorodinitrobenzene sensitization of skin)

POLAK, L., (Praga)

Analysis of afferent segment of reflex arch in sensitization of the skin with dinitrochlorobenzol in guinea pigs. Chekh. fiziol. 4 no.3:325-330 1955.

(REFLEX,
afferent segment in dinitrochlorobenzene sensitization of skin.)
(NITROBENZE,
dinitrochlorobenzene sensitization of skin, eff. on afferent segment of reflex arch)
(SKIN, diseases,
exper. dinitrochlorobenzene sensitization, eff. on afferent reflex segment)
(ALLERGY, experimental,
dinitrochlorobenzene sensitization of skin, eff. on afferent reflex arch)

POLAK, L., (Praga)

Spreading of sensitization of the skin to dinitrochlorobenzol following myelotomy. Chekh. fiziol. 4 no.3:331-334 1955.

(SPINAL CORD, physiology,
eff. of myelotomy on skin sensitization with dinitrochlorobenzene)
(SKIN, diseases,
exper. dinitrochlorobenezene skin sensitization, eff. of myelotomy)
(ALLERGY, experimental,
dinitrochlorobenzene sensitization of skin, eff. of myelotomy)
(NITROBENZENE,
dinitrochlorobenzene sensitization of skin, eff. of myelotomy)

1155. POLÁK L., Hautabt. der Poliklin., Prag I. *Beitrag zum Problem der Pathogenese des Ekzems. Contribution to the problem of the pathogenesis of eczema ARCH. KLIN. EXP. DERM. 1955, 201/2 (124-131)

The author determined, by experiments on guinea-pigs that the sensitization of the skin is a reflex. The centripetal tract is formed by the afferent nerves of the sympathicus of the somatic nerves. The afferent tract is not of nervous nature. Lymphocytes appear to play a part in the sensitization. Van Driel - Utrecht

POLAK, L.

Chemical composition of the skin following denervation interruption of the spine, and during an allergic skin inflammation in guinea pigs. p.186.
(Ceskoslovenska Fysiologie, Vol. 6, No. 2, 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, No. 9, Sept. 1957. Uncl.

POLAK, I.

Chemical commosition of the skin following denervation, following section of the spine, and during allergic inflammation of the skin in guinea pigs. Cesk. fysiol. 6 no.2:196-197 1957.

(SKIN, metabolism,
eff. of denervation, spinal section & allergic inflamm. (Cz))
(SPINAL CORD, physiology,
eff. of section on skin metab. (Cz))
(ALLERGY, experimental,
eff. on skin metab. (Cz))

POLAK, L.

The Chemical Composition of the Skin Following Denervation and the Interruption of the Spinal Cord and in Allergic Inflammation of the Skin in Guinea Pigs. Physiol. bohem. 6 no.2:223-231 1957.

(SKIN, metab.
after denervation, interruption of spinal cord & in exper. allergic dermatitis)
(NERVOUS SYSTEM, physiol.
eff. of denervation on chem. composition of skin)
(SPINAL CORD, physiol.
eff. of spinal cord severance on chem. composition of skin)
(DERMATITIS, exper.
chem. composition of skin in allergic dermatitis)

POLAK, L. (Praha)

Effect of excitation and inhibition of the central nervous system on sensitivity. Cesk. fysiol. 6 no.3:420-428 Aug 57.

(NITROBENZENE, related compounds,
dinitrochlorobenzene, eff. on skin in guinea pigs, eff. of CNS excitation & inhib. (Cz))
(SKIN, effect of drugs on,
dinitrochlorobenzene, eff. of CNS excitation & inhib. on reactivity (Cz))
(CENTRAL NERVOUS SYSTEM, physiology,
excitation & inhib., eff. on skin reactivity to dinitrochlorobenzene (Cz))

2123. POLÁK L. Hautabt., Poliklin. 1, Prag 1. *Der Einfluss zentralnervöser Hemmung sowie Exzitation auf die Dinitrochlor-Sensibilisierung von Meerschweinchen. The influence of central nervous hindrances as well as of excitation on dinitrochlor-sensitization of guinea-pigs ARCH. KLIN. EXP. DERM. 1957, 204/2 (116-123) Graphs 4 Tables 1

The excitement of the CNS speeds the reaction of sensitized animals; the central hindrance caused by medicated sleep, on the contrary, prevents or diminishes it. There is no difference in sensitization between grown-up and new-born guinea-pigs, which tells strongly in favour of a closed development of the CNS at the birth of these animals.

De Boer - Groningen

KUKOLJA, S.; POLAK, Lj.

Substances acting on the central nervous system. I. Derivatives of N-Acyl-2-phenylbutyramide. Croat chem acta 32 no.1:23-30 '60. (EEAI 9:12)

1. Research Department, "Pliva" Pharmaceutical and Chemical Works, Zagreb, Croatia, Yugoslavia.
(NERVOUS SYSTEM) (ACYL GROUPS)
(PHENYLBUTYRAMIDE)

POLAK, Lj.; KUKOLJA, S.

Substances acting on the central nervous system. II. Derivatives of N-(α-bromoacyl)-2-phenylbutyramide. In English. Croat chem acta 32 no.3:151-155 '60. (EEAI 10:7)

1. Research Department, "Pliva" Pharmaceutical and Chemical Works, Zagreb, Croatia, Yugoslavia.
(Nervous system) (Bromophenylbutyramide) (Acyl groups)

42715

S/081/62/000/021/019/069
B156/B101

AUTHORS: Kukolja, S., Polak, Lj., Krnjević, H., Videk, M.

TITLE: Substances acting on the central nervous system. IV. Derivatives of 2-ethyl-2-phenyl butyramide

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 21, 1962, 157, abstract 21Zh125 (Croat. chem. acta, v. 33, no. 3, 1961, 121 - 126 [Engl.]; summary in Serb.-Croat.])

TEXT: Research to find substances acting on the central nervous system has involved the synthesis of a number of derivatives of $C_6H_5C(C_2H_5)_2COOH$ (acid I): $C_6H_5C(C_2H_5)_2CONHR$ (II), $C_6H_5C(C_2H_5)_2CONHCOR$ (III) and $4\text{-}RC_6H_4C(C_2H_5)COR'$ (IV). To 0.1 mole I in 200 ml absolute C_6H_6 40 ml $SOCl_2$ are added; the whole is boiled for 2 hrs, and the volatiles distilles off; without any further purification, the acid chloride is dissolved in 50 ml C_6H_6 or $HCON(CH_3)_2$, 0.05 mole of anhydrous Na_2CO_3 and 0.1 mole of the appropriate amide added, and the mixture heated for 2 hrs at ~100°C and left for

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Substances acting on the central...

~12 hrs at ~20°C; the residue is washed in 10 ml C_6H_6, and II separated from the combined filtrates [R, the gross formula, the yield in %, and the melting point in °C (from alcohol) are given]: C_2H_5, $C_{14}H_{21}NO$, 90, 103 - 104; $CH_2CH_2N(C_2H_5)_2$, $C_{18}H_{31}ClN_2O$ (hydrochloride), 60, 164 - 165 (from alcohol ether); CH_2CH_2OH, $C_{14}H_{21}NO_2$, 81, 66 - 67.5 (from benzene + petroleum ether); $-CH_2CH_2-$, $C_{26}H_{36}N_2O_2$, 80, 107 - 109 (from benzene + petroleum ether); C_6H_5, $C_{18}H_{21}NO$, 89, 85 - 86.5; $CH_2C_6H_5$, $C_{19}H_{25}NO$, 85, 120 - 122; 5-propyl mercapto thiadiazole-1,3,4-yl-2, $C_{17}H_{23}N_3OS_2$, 78, 89 - 91; 5-isopropyl mercapto thiadiazolyl-1,3,4-yl-2, $C_{17}H_{23}N_3OS_2$, 61, 91 - 93; 2-phenyl-pyrazolyl-3, $C_{21}H_{23}N_3O$, 70, 126 - 128. 0.02 mole of $C_6H_5C(C_2H_5)_2CONH_2$ (V) and 0.02 mole $NaNH_2$ are boiled in 15 ml of anhydrous C_6H_6 for 2 hrs; after cooling, 0.025 mole of RCOCl are added and the mixture is boiled for 2 hrs; after ~12 hrs, at ~20°C, 10 ml of water are added, and III is separated from the organic layer [(R, the gross formula,

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Substances acting on the central...

alcohol). Another substance produced from IVa is IV (R = $N(CH_3)_2$, R' = OH) (IVd), $CH_{14}N_{21}NO_2$, yield 83 %, m.p. 145 - 146°C (from dilute alcohol). 0.5 g IVd are methylated with CH_2N_2 produced from 1 g nitroso-methyl carbamide, and the methyl ester of IVd [R = $N(CH_3)_2$, R' = OCH_3], $C_{15}H_{23}NO_2$, is obtained; yield 90 %, m.p. 79 - 80°C. The methyl ester (R = CH_3CONH, R' = OCH_3), $C_{15}H_{21}NO_3$, (yield 90 %, m.p. 143 - 144°C) is synthesized in an analogous manner from 0.6 g of IVc. 10 g IV (R = H, R' = NH_2) (IVe) are cooled with ice and added to 50 ml of concentrated H_2SO_4, and during 20 min at 0 - 10°C 4 ml of fuming HNO_3 are added drop by drop; the mixture is held in ice for 30 min, and poured out onto ice; the resultant product is 54 % of IV (R = NO_2, R' = NH_2) (IVf), $C_{12}H_{16}N_2O_3$, m.p. 127 - 128°C. To 1 g IVa in 10 ml C_6H_6 2 ml of $SOCl_2$ are added; the mixture is boiled for 2 hrs, the volatile substances evaporated, the residue dissolved in 10 ml C_6H_6 and saturated with NH_3 gas; the product is 40 % of IVf. By nitrating

10 g $C_6H_5C(C_2H_5)_2CN$ (VII) in a manner analogous with the production of IVa, 47.5 % of 4-$NO_2C_6H_4C(C_2H_5)_2CN$ (VIII), $C_{12}H_{14}N_2O_2$, m.p. 81 - 83°C (from benzene) are synthesized. 3 g VIII in 10 ml 96 % H_2SO_4 are heated for 8 hrs at 70°C and poured onto ice; 67 % IVf are extracted with C_6H_6. IV is correspondingly produced in a manner analogous with that described above for the synthesis of IVd and IVe (R, R', the gross formula, the initial substance, the percentage yield, and the melting point in °C, are given): $N(CH_3)_2$, NH_2, $C_{14}H_{22}N_2O$, IVf, 79, 119 - 120; NH_2, NH_2, $C_{12}H_{18}N_2O$, IVf, 53, 142 - 143. 85 g VII, 250 ml concentrated H_2SO_4, and 25 ml water are heated at ~ 100°C for four hrs, and then after cooling poured onto ice, C_6H_6 being used for extracting 81 % of nonpurified IVe, m.p. 49 - 51°C. 77 g of nonpurified IVe are treated by the method described earlier (see N. Sperber et al, J. Amer. Chem. Soc., v. 70, 1948, 3091), with C_4H_9ONO in CH_3COOH, and 90 % I, m.p. of 90 - 91°C, is produced. For communication III, see RZhKhim, 1962, 8Zh134. [Abstracter's note: Complete translation.]

Card 5/5

MOLCAN, J.; TESAROVA, O.; SCHMIDT, P.; POLAK, L.; PAYEROVA, J.

Our experience with chlorprothixen and changes of some biological indices during the course of therapy. Activ. nerv. sup. 4 no.2:224-225 '62.

1. Psychiatricka klinika, Bratislava.

(PSYCHOPHARMACOLOGY)

MOLCAN, J.; TESAROVA, O.; SCHMIDT, P.; POLAK, L'.; PAYEROVA, J.

The problem of chlorprothixene therapy of mental disorders. Bratisl. Lek. Listy 42 no.5:283-288 '62.

1. Z Psychiatrickej kliniky Lek. fak. Univ. Komenskeho v Bratislave, veduci prof. MUDr. E. Guensberger.

(CHLORPROTHIXENE) (MENTAL DISORDERS)

HOLCIK, L.; POLAK, L.

Incidence of extradermal malignant tumors in Bowen's disease.
Cesk. derm. 39 no.5:327-329 S '64.

1. Onkologicky ustav v Brne (reditelka MUDr. D. Kadlecova, CSc.).

207-210.

Abstract : No abstract.

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15-57-12-17258

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 12, p 72 (USSR)

AUTHOR: Polak, L. S.

TITLE: Rules of Change in Porosity and Density With the Depth of Sedimentary Deposits (Zakonomernosti izmeneniya poristosti i plotnosti osadochnykh porod s glubinoy ikh zaleganiya)

PERIODICAL: Tr. In-ta nefti AN KazSSR, 1956, Vol 1, pp 17-32

ABSTRACT: The author notes that the density of a clay formation increases and that porosity decreases with depth. The increase of density, brought about by means of vibration of normal sands and of natural medium-grained sands, is quite insignificant (about 2.5 percent under the pressure of about 30,000 kg/cm^2). It is produced by fracturing and redistribution of grains. Hydrochemical deposits are practically incompressible. The decrease in the thickness of sedimentary strata, which is caused by their consolidation, is proportional to the clay

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15-57-12-17258

Rules of Change in Porosity and Density (Cont.)

content in the section. Coagulation is of importance in increasing the density of clays; it becomes more intensive when particles approach one another, when the surface electrical charge on the particles and on the diffusion layer becomes lower, and when the concentration of electrolites (characteristic in the localities with strongly mineralized ground water) becomes greater. The aging processes of hydrogels are also important in this process. Clay formations pass through four stages under the influence of growing gravitational pressure; these stages differ from one another by the predominance of various physical and chemical processes: 1) the stage of mechanical regrouping--at the depth of 5 cm to 10 cm below the surface of the deposit; 2) the stage of dehydration--at the depth about 200 m; 3) the stage of mechanical deformation--down to the depth of 2 000 m; 4) the stage of recrystallization--formation of denser minerals). The hysteresis effect can be observed in consolidation of a clay formation during the subsequent tectonic lifting of this formation to the surface. This effect may serve as an auxiliary stratigraphic criterion. The coefficient of velocity

Card 2/3

POLAK, L.S.

AYRAPETYAN, M.A.; POLAK, L.S.

Using radioisotopes for studying the movement and distribution of fluids in a formation. Trudy Inst. nefti AN Kazakh. SSR no.1:46-51 '56. (MLRA 10:4)

(Secondary recovery of oil) (Radioisotopes--Industrial Applications)

POLAK, L.S.

On the history of the wave theory of light. Vop.ist.est.i tekh. no.2:76-91 '56. (MIRA 10:1)
(Light, Wave theory of)

GRIGOR'YAN, A.T.; POLAK, L.S.

Outline of the history of mechanics in Russia in the second part of the 19th century and in the beginning of the 20th century (from 1861 to 1917). Trudy Inst.ist.est.i tekh. 10:85-163 '56.
(Russia--Mechanics) (MLRA 9:12)

POLYAK, L.S.; RAPOPORT, M.B.

Relation between electrical and elastic properties of rocks. Prikl. geofiz. no.15:127-134 '56. (MLRA 10:1)
(Rocks--Electrical properties)

15-57-10-14620

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 10, p 209 (USSR)

AUTHORS: Polak, L. S., Rapoport, M. B.

TITLE: The Absorption of Gamma Rays by Sedimentary Rocks (O pogloshchenii gamma-luchey osadochnymi porodami)

PERIODICAL: Prikl. geofizika, 1956, Nr 15, pp 135-139

ABSTRACT: The relationship of the absorption coefficient of gamma rays with the energy of 1.25 Mev (isotope Co^{60}) to rock density was proved experimentally. A source of gamma rays consisting of rock with a thickness $x \geq 3$ cm and an AMM-12 counter were placed in a lead chamber with walls 5 cm thick. The distance from the source to the sample was sufficiently great, in comparison to the dimension of the latter, to allow us to consider the gamma rays passing through the sample to be parallel. The counter rested against the sample on the side opposite the source, and was fully covered by the sample from direct radiation. The impulse count was obtained with the help

Card 1/2

POLAK, L.S. Doc Phys-Math Sci--(diss) "Principles of variation in mechanics, their development, and certain applications in physics.(1662-1926)." Mos 1957. 39 pp 22 cm. (Acad Sci USSR. Inst of History of Natural Sci and Technology), 110 copies (KL, 7-57, 103)

2

Polak, L.S.

POLAK, L.S.

Latent motions in Helmholtz's theory of heat. Vop. ist. est. i tekh. no.3:62-73 '57. (MIRA 11:1)

(Thermodynamics)

GRIGOR'YAN, A.T.; POLAK, L.S.

Heinrich Hertz's basic principles of mechanics. Vop.ist.est. i tekh. no.5:19-30 '57. (MIRA 11:2)
(Hertz, Heinrich Rudolph, 1857-1894)
(Mechanics, Analytic)

POLAK, L.S.

On certain relationships between the coefficient of membrane electromotive force, polarization constant anomalies, and the physical properties of collectors. Prikl. geofiz. no.16:227-234 '57.
(Soil physics) (MLRA 10:8)

POLAK, L.S.

Attenuation and absorption of reflected waves in sedimentary rocks.
Prikl. geofiz. no.17:16-32 '57. (MIRA 11:2)
(Seismic waves)

POLAK, L.S.

POLAK, L.S.

Regularities in the natural radioactivity of Mesozoic and Tertiary deposits of the Caspian Depression. Prikl. geofiz. no.17:274-283 '57. (MIRA 11:2)

(Caspian Sea region--Nuclear geophysics)

SOV/124-58-11-12016

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 11, p 11 (USSR)

AUTHOR: Polak, L. S.

TITLE: Poisson's Parentheses (Skobki Puassona)

PERIODICAL: Tr. In-ta istorii yestestvozn. i tekhn. AN SSSR, 1957, Vol 17, pp 450-472

ABSTRACT: Bibliographic entry

Card 1/1

POLAK, L.S.; RAPOPORT, M.B.

Remarks on the elastic properties of earths. Razved. i prom. geofiz. no.19:31-39 '57. (MIRA 10:11)

(Soil mechanics)

POLAK, L.S.

Origin of the atomic quantum theory (Rutherford-Bohr's model of the atom). Trudy Inst. ist. est. i tekh. 19:431-449 '57. (MIRA 11:2)
(Atomic theory)

SOV/124-58-8-8351

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 8, p 2 (USSR)

AUTHOR: Polak, L.S.

TITLE: Some 19th-century and First-quarter 20th-century Trends in the Development of the Principles of System Dynamics (Nekotoryye tendentsii razvitiya printsipov dinamiki sistemy v XIX v. i pervoy chetverti XX v.)

PERIODICAL: Tr. In-ta istorii yestestvozn. i tekhn. AN SSSR, 1957, Vol 19, pp 538-543

ABSTRACT: Bibliographic entry

Card 1/1

20-119-1-32/52

AUTHORS: Polak, L. S., Topchiyev, A. V., Member, Academy of Sciences, USSR, Chernyak, N. Ya., Kachkurova, I. Ya.

TITLE: Investigation of the Radiolysis of Hydrocarbons by Spectral Methods (Izucheniye radioliza uglevodorodov spektral'nymi metodami)

PERIODICAL: Doklady Akademii Nauk SSSR,1958,Vol.119,Nr 1,pp.117-120(USSR)

ABSTRACT: In the investigation of the radiolysis of hydrocarbons the qualitative and quantitative determination of their products in the liquid phase exhibits the greatest difficulties. In this regard the investigation of the absorption spectra in the ultraviolet and inffared range is an essential aid. In the radiolysis of the alkanes essentially a breaking of the C-H-bonds takes place, representing the process of the dehydration. The investigation of the ultraviolet absorption spectra makes it possible to ascertain the presence of conjugated dienes in the products of the radiolysis and the method of the infrared absorption spectra makes it possible to ascertain the presence of compounds with an ethylene bond (heptenes etc). Moreover several other particularities

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possible. The data obtained in the fractionated irradiation of heptane confirm and define the data obtained from the ultraviolet absorption spectra. The corresponding member of the AS USSR I. V. Obreimov made possible the photographing of the absorption spectra in the ultraviolet range and Professor S. R. Sergiyenko and M. P. Teterina took the infrared spectrum. There are 4 figures and 2 references, 2 of which are Soviet.

ASSOCIATION: Institut nefti Akademii nauk SSSR
(Petroleum Institute of the AS USSR)

SUBMITTED: October 8, 1957

20-119-2-33/60

AUTHORS: Polak, L. S., Topchiyev, A.V., Member of the Academy of Sciences, Chernyak, N. Ya.

TITLE: The Radiolysis of Heptane and Some Other Alkanes (Radioliz geptana i nekotorykh drugikh alkanov)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol 119, Nr 2 pp 307-310 (USSR)

ABSTRACT: The present paper is the first of a planned series of works on the basic rules and the mechanism of the radiolysis of the individual hydrocarbons of the paraffin series in liquid and solid phase on the action of γ-radiation. As radiation source served Co^{60}; with the apparatus having a rated power of 1400 and 20 000. The main experiments were carried out with H - heptane but also other individual hydrocarbons were used. The hydrocarbons were irradiated in sealed molybdenum-glass ampoules. In opening the ampoule containing the product irradiated with a certain radiation dosage the amount of

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The Radiolysis of Heptane and Some Other Alkanes

separated gas was determined. Then the gas was analysed with respect to its content of H_2, CH_4 and other hydrocarbon gases. Besides, the ultraviolet and infrared spectra of the irradiated products were taken. A change of the temperature within the interval from -30 to + 200° has no effect on the yield and the character of the gaseous products of radiolysis. The gas separation of the irradiation stops when the irradiation is interrupted and after the rebeginning of irradiation takes the same course as before. A diagram shows the curves for the radiation-dependent changes in liquid heptane as well as for the total gas yield obtained in it as function of the γ-radiation dosage absorbed in it. At dosages of from 0 to 500.10^6 r the gas quantities formed in radiolysis, the increases of molecular weights, of specific weights and the diffraction coefficients of the liquid phase depend linearly on the dosage of radiation. The authors investigated also the influence of the number of CH_2-groups and of the relative content of CH_3-groups in a molecule on the results of radiolysis.

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The Radiolysis of Heptane and Some Other Alkanes

im. L. Ya. Karpova) and especially L. Kh. Breger and V. B. Osipov for their collaboration. There are 3 figures, 1 table and 9 references, 4 of which are Soviet.

ASSOCIATION: Institut nefti Akademii nauk SSSR (Petroleum Institute, AS USSR)

SUBMITTED: October 8, 1957

SOV/20-120-2-34/63

AUTHORS: Chernyak, N. Ya., Bubnov, N. N., Voyevodskiy, V. V., Polak, L. S., Tsvetkov, Yu. D.

TITLE: The Formation of Free Radicals and of Atoms in the Radiolysis of Hydrocarbons at a Temperature of 77°K (Ob obrazovanii svobodnykh radikalov i atomov pri radiolize uglevodorodov pri temperature 77°K)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 120, Nr 2, pp. 346 - 348 (USSR)

ABSTRACT: References are made in publications to free radicals formed during the action of ionizing radiation, as by X-rays, γ-radiation, fast electrons etc. This is caused by a rupture of C - C and of C - H bindings. When fluid hydrocarbons are radiolysed, the life of the free radicals is very short. The main products of radiolysis, apart from liquid products with one or two conjugated double bindings, are H_2 and $C_{14}H_{30}$. The latter compound is considered to be a dimer of the heptyl radical. The method of determining the radical is shortly described. The following hydrocarbons were investigated: hexane,

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heptane, octane, dodecane, cetane, isooctane, cyclohexane, benzene and toluene. In all cases intensive signals of paramagnetic electron resonance with a g-factor of ~ 2,0 are observed. In paraffin-type hydrocarbons and in cyclohexane a hyperfine structure was very clearly observed. According to the attached photographs the hyperfine structure is considerably changed if the structural properties of the initial molecule change. Another peculiarity of the spectra pf paramagnetic electron resonance of the hydrocarbons which are irradiated in a frozen state is the existence of considerable concentrations of hydrogen atoms. This is also indicated by two narrow signals which are located symmetrically at a distance of about 250 Oersted (Ersted) from the signals of the alkyl radical. The hydrogen atoms probably do not become stabilized in the volume of the frozen hydrocarbons but on the internal surface of the quartz ampoule. In a table the quantitative measurements performed on the basis of the example of heptane concerning the concentration of the free radicals with a dose of ~ 10^7r are compared with the data of the chemical analysis of a sample irradiated under absolutely identical conditions. The results

The Formation of Free Radicals and of Atoms in the Radiolysis of Hydrocarbons at a Temperature of 77°K SOV/20-120-2-34/53

obtained by both measurements agree in a satisfactory manner. There are 2 figures, 1 table, and 4 references, 2 of which are Soviet.

ASSOCIATION: Institut nefti AN SSSR (Petroleum Institute, AS USSR) Institut khimicheskoy fiziki, AN SSSR (Institute of Chemical Physics AS USSR)

SUBMITTED: January 11, 1958

1. Hydrocarbons--Temperature factors 2. Free radicals --Production 3. Atoms--Production 4. Hydrocarbons --Test results

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POLAK, L. S., TOPCHIYEV, A. V., LAVROVSKIY, K. P. BRODSKIY, A. I.
KOLBANOVSKIY, Y. A.

"Studying the Radiation Chemistry of Petroleum Hydrocarbons and the Application of Nuclear Radiation in the Oil Processing Industry and in Oil-Chemical Synthesis."

Report submitted at the Fifth World Petroleum Congress, 30 May - 5 June 1959. New York.

POLAK, L.S.; FEL'DMAN, G.I., red.; MURASHOVA, N.Ya., tekhn.red.

[Variational principles in mechanics] Variatsionnye printsipy mekhaniki. Moskva, Gos.izd-vo fiziko-matem.lit-ry, 1959. (MIRA 12:7)

(Mechanics, Analytic)

GERTS, Genrikh [Hertz, Heinrich Rudolf]; GRIGOR'YAN, A.T.; POLAK, L.S.; KOTOV, V.F. [translator]; SULIMO-SAMUYLO, A.V. [translator]; ARTOBOLEVSKIY, I.I., red.; GUROV, K.P., red.izd-va; NOVICHKOVA, N.D., tekhn.red.

[Principles of mechanics, presented in a new form] Printsipy mekhaniki, izlozhennye v novoi sviazi. Izd.podgotovili A.T. Grigor'ian, L.S.Polak. Obshchaia red. I.I.Artobolevskogo. [Translated from the German]. Moskva, Izd-vo Akad.nauk SSSR, 1959. 386 p. (MIRA 12:4)

(Mechanics, Analytic)

POLAK, L.S.; GRIGOR'YAN, A.T., otv.red.; LARIN, S.I., red.izd-va; POLYAKOVA, T.V., tekhn.red.

[Development of the basic concepts in physics] Ocherki razvitiia osnovnykh fizicheskikh idei. Moskva, 1959. 510 p. (MIRA 12:3)

1. Akademiya nauk SSSR. Institut istorii yestestvoznaniya i tekhniki.

(Physics)

POLAK, L.S.

PHASE I BOOK EXPLOITATION SOV/5084

International Conference on the Peaceful Uses of Atomic Energy. 2d, Geneva, 1958.

Doklady sovetskikh uchenykh. [t.4] Khimiya radioelementov i radiatsionnykh prevrashcheniy (Reports of Soviet Scientists. v. 4.: Chemistry of Radioelements and Radiation Transformations) Moscow, Atomizdat, 1959. 323 p. 8,000 copies printed. (Series: Its: Trudy)

Ed. (Title page): A. P. Vinogradov, Academician; Ed.: V. I. Labaznov; Tech. Ed.: Ye. I. Mazel'.

PURPOSE: This collection of articles is intended for scientists and engineers interested in the applications of radioactive materials in science and industry.

COVERAGE: The book contains 26 separate studies concerning various aspects of the chemistry of certain radioactive elements and the processes of radiation effect on matter. These reports discuss present-day methods of reprocessing irradiated nuclear fuel, research in the chemistry of mercury, thorium, uranium, plutonium, and americium, problems related to the sorption and burying of radioactive wastes, the radiolysis of aqueous solutions and of organic compounds, the mechanism of polymer chain grafting, and the effect of radiation on natural and synthetic rubbers. V. N. Prusakov edited the present volume. Most of the reports are accompanied by references. Contributors to individual investigations are mentioned in annotations to the Table of Contents.

TABLE OF CONTENTS:

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POLAK, L.S.

First steps of quantum physics. Vop. ist. est. i tekh. no.6:56-71 '59. (MIRA 12:6)
(Quantum theory)

POLAK, L.S.; SOLOV'YEV, Yu.I.

History of physical chemistry; work of Helmholtz in the field of physical chemistry. Vop.ist.est.i tekh. no.8:48-56 '59. (MIRA 13:5)
(Helmholtz, Hermann Von, 1821-1894)
(Chemistry, Physical and theoretical)

5 (3)

AUTHORS: Andreyev, L. N., Krentsel', B. A., Litmanovich, A. D., Polak, L. S., Topchiyev, A. V.

SOV/62-59-8-38/42

TITLE: On the Radiation Synthesis of the Copolymer of Akrylonitrile With Propylene

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 8, p 1507

ABSTRACT: As is known, gaseous olefines do not easily polymerize under the influence of γ-rays. The authors proved this fact also for propylene, which does not polymerize in a condensed state at room temperature and a radiation dose of $\sim 5.0 \cdot 10^6$ roentgen. It was tried to copolymerize the easily polymerizing akrylonitrile with propylene under the influence of γ-rays. The mixture of the two monomers was subjected to an integral radiation dose of $3.5 \cdot 10.10^6$ roentgen (γ-Co^{60}). The product obtained was extracted successively with dimethylformamide, n-heptane, and ether. The percentage of propylene links in the copolymer was determined from the elementary analysis of the remaining residue. At a change of the weight ratio of propylene and akrylonitrile from 0.75 to 0.15 the percentage of propylene links in the copolymerizate

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decreases from 26 to 12%. The same copolymer was obtained by thermal copolymerization in the presence of benzoylperoxide at 75°. In this case the percentage of propylene links in the copolymer at a weight ratio propylene : akrylonitrile = 0.3 was 17%. There is 1 reference.

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR (Institute of Petroleum-chemical Synthesis, Academy of Sciences, USSR)

SUBMITTED: May 20, 1959

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POLAK, L.S.; SOLOV'YEV, Yu.I.

Max Planck as a physical chemist. Trudy Inst. ist. est. i tekh. 22:13-32 '59. (MIRA 12:10)

(Planck, Max, 1858-1947)

24(7), 5(3)

SOV/51-6-4-26/29

AUTHORS: Chernyak, N. Ya., Bubnov, N.N., Polyak, L.S., Tsvetkov, Yu. D. and Voyevodskiy, V.V.

TITLE: On Certain Regularities in the Electron Paramagnetic Resonance Spectra of Alkyl Radicals (O nekotorykh zakonomernostyakh v spektrakh elektronnogo paramagnitnogo rezonansa alkil'nykh radikalov)

PERIODICAL: Optika i Spektroskopiya, 1959, Vol 6, Nr 4, pp 564-565 (USSR)

ABSTRACT: In the study of the electron paramagnetic resonance (e.p.r.) spectra of radicals formed on γ-irradiation or frozen hydrocarbons (at 77°K), it was found that the hyperfine structure (h.f.s.) varies with the position of the hydrocarbon in its homologous series. Fig 1 shows the spectra of radicals of normal paraffin hydrocarbons from $C_{11}H_{23}$ to $C_{16}H_{33}$ obtained under conditions described earlier (Ref 1). The samples were of 97-98% purity. Fig 1 shows that h.f.s. of the even ($C_{12}H_{25}$, $C_{14}H_{29}$, $C_{16}H_{33}$) and odd ($C_{11}H_{23}$, $C_{13}H_{27}$, $C_{15}H_{31}$) hydrocarbons differ considerably. In odd hydrocarbons the h.f.s. is well resolved and the intensities of the central components differ only slightly from one another. In even hydrocarbons the resolution is much poorer and the intensity distribution is close to binomial. In paraffin hydrocarbons from n-C_5 to n-C_{10} the spectra are more complex and more similar to

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one another. Two of them are shown in Fig 2, where curves 1 and 2 represent the e.p.r. spectra of C_6H_{13} and C_7H_{15} respectively. The spectra of radicals of cyclic hydrocarbons (with five or six C atoms, shown in Fig 3) are in many respects similar to the corresponding spectra of the odd and even terms of the series C_{11}-C_{16}. The simplest spectrum is that of cyclo-C_6. The hyperfine splitting and component intensities may be explained by assuming that the spectrum is a triplet (with 37 oersted splitting and 1:2:1 ratio of intensities of the components) and each components of the triplet is split into two lines (20 oersted separation). Such a spectrum occurs in the radical cyclo-C_6H_{11}. Following Ingram (Ref 3) it is assumed here that of four hydrogen atoms in the β-position, the free valence, only two take part in the hyperfine splitting. This produces a triplet. Interaction with a hydrogen atom in the α-position produces the doublet splitting of each triplet component. In the case of cyclo-C_5H_{10} the molecule is almost planar and both hydrogen atoms of the β-groups CH_2 in the radical should be equivalent with respect to free valance and the number of h.f.s. components should increase. The spectra shown in Fig 3 confirm these deductions. The authors conclude by pointing out that the e.p.r. spectra

can be used in molecular structure studies and in chemical analysis. There are 3 figures and 3 references, 2 of which are Soviet and 1 English.

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24(7), 21(1)

AUTHORS: Bubnov, N.N., Voyevodskiy, V.V., Polyak, L.S. and Tsvetkov, Yu. D.

TITLE: Electron Paramagnetic Resonance Spectrum of Hydrogen Atoms Stabilized on Solid Surfaces (O spektrakh elektronnogo paramagnitnogo rezonansa atomov vodoroda, stabilizirovannykh na tverdykh poverkhnostyakh)

PERIODICAL: Optika i Spektroskopiya, 1959, Vol 6, Nr 4, pp 565-566 (USSR)

ABSTRACT: It was reported (Refs 1, 2) that H atoms, formed on γ-irradiation of frozen hydrocarbons and other compounds, can be stabilized on various surfaces. The present paper reports studies of the effect of the nature of the stabilizing surface on the magnitude of h.f.s. splitting of the electron paramagnetic resonance (e.p.r.) spectra of H atoms and the width of the e.p.r. absorption lines. The H atoms were stabilized on quartz, silica gel and molybdenum glass. They were formed by irradiation of these three substances with γ-rays at 77°K. It may be assumed that formation of H atoms is due to rupture of bonds in H_2O molecules adsorbed on these surfaces or rupture of bonds in SiOH groups (Ref 3). The magnitude of h.f.s. splitting in all the three cases was found to be close to 500 oersted which does not differ greatly from splitting in a free H atom (Ref 4). Width of the components of the hydrogen doublet depends strongly on the nature of the surface: on

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